

p57 Kip2 siRNA (m): sc-37621

BACKGROUND

Cell cycle progression is regulated by a series of cyclin-dependent kinases that consist of catalytic subunits designated Cdk and activating subunits designated cyclins. Orderly progression through the cell cycle requires the activation and inactivation of different cyclin-Cdks at appropriate times. A series of proteins has been described that function as mitotic inhibitors. These include p21 Waf1/Cip1, the levels of which are elevated upon DNA damage in G₁ in a p53-dependent manner; p16 INK4A; and p16 INK4A-related inhibitors, designated p15 INK4B, p18 INK4C and p19 INK4D. A p21 Waf1/Cip1-related protein, p27, has been described as a negative regulator of G₁ progression and has been speculated to function as a possible mediator of TGF β -induced G₁ arrest. A member of the p21 Waf1/Cip1/p27 family of mitotic inhibitory proteins, p57 Kip2 (also designated p57 and Kip2), is a potent, tight-binding cyclin-dependent inhibitor of several G₁ cyclin/Cdk complexes. Overexpression of p57 Kip2 arrests cells in G₁. Unlike p21 Waf1/Cip1, p57 Kip2 is not regulated by p53.

REFERENCES

- Sherr, C.J. 1993. Mammalian G₁ cyclins. *Cell* 73: 1059-1065.
- El-Deiry, W.S., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. *Cell* 75: 817-825.
- Xiong, Y., et al. 1993. p21 is a universal inhibitor of cyclin kinases. *Nature* 366: 701-704.
- Serrano, M., et al. 1993. A new regulatory motif in cell-cycle control causing specific inhibition of cyclin D/CDK4. *Nature* 366: 704-707.

CHROMOSOMAL LOCATION

Genetic locus: Cdkn1c (mouse) mapping to 7 F5.

PRODUCT

p57 Kip2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see p57 Kip2 shRNA Plasmid (m): sc-37621-SH and p57 Kip2 shRNA (m) Lentiviral Particles: sc-37621-V as alternate gene silencing products.

For independent verification of p57 Kip2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37621A, sc-37621B and sc-37621C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

p57 Kip2 siRNA (m) is recommended for the inhibition of p57 Kip2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

p57 Kip2 (KP39): sc-56341 is recommended as a control antibody for monitoring of p57 Kip2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor p57 Kip2 gene expression knockdown using RT-PCR Primer: p57 Kip2 (m)-PR: sc-37621-PR (20 μ l, 593 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Muller-Brusselbach, S., et al. 2007. Deregulation of tumor angiogenesis and blockade of tumor growth in PPAR β -deficient mice. *EMBO J.* 26: 3686-3698.
- Van De Pette, M., et al. 2016. Cdkn1c boosts the development of brown adipose tissue in a murine model of Silver Russell syndrome. *PLoS Genet.* 12: e1005916.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.